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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/442,871	11/18/1999	NICHOLAS A. DOUDOU MOPOULOS	08305/054001	6493

7590

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EXAMINER

LUU, THANH X

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 03/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/442,871

Applicant(s)

DOUDOU MOPOULOS, NICHOLAS A.

Examiner

Thanh X Luu

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-8, 11-13 and 15-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-8, 11-13 and 15-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 24 October 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 21, 2002 has been entered.

Claims 6-8, 11-13 and 15-20 are currently pending.

### ***Specification***

2. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

Page 3, "the size a witch's 550 mills, besides be witch's 410 mills, the size see which is 239 mills..."

### ***Drawings***

3. The proposed drawing correction filed on October 24, 2002 has been disapproved because it is not in the form of a pen-and-ink sketch showing changes in red ink or with the changes otherwise highlighted. See MPEP § 608.02(v).

Examiner notes that the drawing correction was faxed in, and therefore, the

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highlights could not be distinguished.

***Claim Objections***

4. Claims 6, 7 and 11 are objected to because of the following informalities:

In claims 6 and 7, "which connections" lacks proper antecedent basis.

In claim 11, "said image sensor" lacks proper antecedent basis since it is unclear which image sensor (first or second or both image sensors) is being referred to.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 6 and 11 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 6 and 11, there appears to be insufficient support for an embodiment in which there are connections on edges of a perimeter of an image sensor, wherein the image sensor comprises two image sensors. At least from Figure 3, it shows leads coming from only one edge.

In response, Applicant should cite to specific sections of the specification in which such an embodiment is supported, otherwise, Examiner reminds Applicant that no new matter may be added.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 7 and 8, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Shibata et al. (U.S. Patent 4,827,118).

Regarding claims 7 and 8, Shibata et al. disclose (see Figures 1, 2 and 16) a packaged photosensitive element and method, comprising: a photosensitive element (10) having electrical connections (electrodes that connect to 50); and a clear plastic package (20), having the photosensitive element mounted therein, and providing an edge perimeter with connections (31, 33), the electrical connections are connected (via 50) to the connections of the clear plastic package, and the clear plastic package being clear at all locations within the perimeter. A photosensitive element inherently accumulates charge using a photogate. Shibata et al. further disclose light coming from different incoming angles, which pass through different surfaces (a flat surface, a diagonal surface) of the package.

9. Claim 7, as understood, is rejected under 35 U.S.C. 102(b) as being anticipated by Tomisawa et al. (U.S. Patent 5,122,045).

Regarding claim 7, Tomisawa et al. disclose (see Figures 14 and 15) a packaged photosensitive element and method, comprising: a photosensitive element (10) having electrical connections (bonding pads 14; see Figure 3A); and a plastic package (12), having the photosensitive element mounted therein, and providing an edge perimeter with connections (13A-D), the electrical connections are connected (via bonding wire; see Figure 4) to the connections of the plastic package. A photosensitive element inherently accumulates charge using a photogate. Furthermore, the plastic package of Tomisawa et al. is inherently clear since light is detected by the photosensitive element enclosed within the package.

10. Claims 11-13 and 16-18, as understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Kobachi et al. (U.S. Patent 5,811,797).

Regarding claims 12, 13 and 16-18, Kobachi et al. disclose (see Figure 8A) an image sensor and method, comprising: first (112A) and second (112D) image sensors; and a clear plastic package (119) for the first and second image sensors, the clear plastic package packaging the image sensors with the first image sensor acquiring light from a first side (left side) of the clear plastic package, and the second image sensor acquiring light from a second, opposite side (right side) of the clear plastic package. Kobachi et al. further disclose (see Figure 8A) a perimeter surrounding the first and second image sensors, and an edge (left edge) of the perimeter including electrical connections (115) to the first and second image sensors. Image sensors inherently accumulate charge using a photogate.

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Regarding claim 11, Kobachi et al. disclose (see Figure 8A) a method, comprising: obtaining an image sensor with electrical connections (bond wires, not shown), which comprises first and second image sensors (112A, 112D); forming a clear plastic package (119) for the image sensors, with the image sensors totally encased within the clear plastic package; forming connections (115) on edges of a perimeter of the clear plastic package; connecting electrical connections (not shown) of the image sensors to the connections of the clear plastic package; and operating the image sensors to receive light that passes through the clear plastic package, wherein the first image sensor acquires light in a first direction (left beam) and the second image sensor acquires light in a second direction (right beam) through the clear plastic package.

11. Claim 19, as understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Taniguchi et al. (U.S. Patent 6,091,689).

Regarding claim 19, Taniguchi et al. disclose (see Figure 9) an image sensor, comprising: a clear package (2), having a rectangular outer perimeter with image acquiring surfaces defined within the perimeter; and an image sensor (PD1 and PD2), obtaining image information from a first image acquiring surface (2a) and from a second opposite image acquiring surface (2b).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



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13. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobachi et al.

Regarding claim 15, Kobachi et al. disclose (see Figure 8A) light receiving elements (112A and 112D). Kobachi et al. do not specifically disclose CMOS active pixel sensors. However, CMOS active pixel sensors are notoriously well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use CMOS active pixel sensors in the apparatus of Kobachi et al. to provide more resolution and improve detection.

14. Claims 6, 19 and 20, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al. (U.S. Patent 4,329,577) in view of Kobachi et al.

Regarding claims 19 and 20, Asano et al. disclose (see Figure 12A) an image sensor, comprising: an image sensor, obtaining image information from a first image acquiring surface (15) and from a second opposite image acquiring surface (15'). Asano et al. further disclose (see Figure 12A) the image sensor includes a first and second image sensors facing in opposite directions. Asano et al. do not specifically disclose a clear rectangular package. Kobachi et al. teach (see Figures) enclosing an image sensor in a clear rectangular package to further protect the image sensor from damage. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to enclose the image sensor of Asano et al. in view of Kobachi et al. in a clear rectangular package to protect and image sensor from damage and thereby improve detection.

Regarding claim 6, Asano et al. disclose (see Figure 12A) a photosensitive element (15), having electrical connections; and a second photosensitive element (15') receiving incoming light from a different direction and through a different surface than the photosensitive element. Asano et al. do not specifically disclose the photosensitive element mounted in a clear plastic package. Kobachi et al. teach (see Figures) enclosing a photosensitive element in a clear plastic package having connections that connect to electrical connections of the photosensitive element. Thus, Kobachi et al. recognize that a clear plastic package provides protection for the photosensitive element, while still allowing for the photosensitive element to detect light. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a clear plastic package around the photosensitive elements of Kobachi et al. to protect the photosensitive elements and prolong the life of the device.

### ***Response to Arguments***

15. Applicant's arguments with respect to claims 6, 7, 19 and 20 have been considered but are moot in view of the new ground(s) of rejection.

Regarding claims 11-13 and 16-20, Applicant asserts that Kobachi does not receive incoming light from different directions and through different surfaces. However, such language is not found in claims 11-13 and 16-20. As set forth above, Kobachi et al. or Asano et al. do disclose the claimed invention.

Regarding claim 8, Shibata et al. disclose the claimed invention, not Kobachi as asserted by Applicant.

Thus, as set forth above, this rejection is proper.

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**Conclusion**

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl  
March 4, 2003



Thanh X. Luu  
Patent Examiner